# Technology Management Driven Noble Initiative Of India: Swayam

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**ABSTRACT - Technology is bringing lots of changes to traditional class room pedagogy and the rate of imparting education. Education is affecting much disruption in all spheres of life. Students are devoting lots of time to be digitally ready. We need to give many opportunities to the students to acquire the needed skill for the digital world and acquire lots of skill sets for becoming future ready. Teachers need to be given chance to update, rethink, re-imagine and renew their knowledge and skill sets. This is being discussed in the paper with emphasis on SWAYAM.**

**Keywords - SWAYAM, MOOC, ICT, National Coordinator, PI, host institution and ERP**

## I. INTRODUCTION

As we are aware, SWAYAM (Study Webs of Active Learning for Young Aspiring Minds) is our national platform of the GoI which has Massive Open Online Courses (MOOCs) to assist every one to attend virtually the courses taught by the iconic and leading faculty members; access good reading materials; participate in debate/ discussions; take exams and get evaluated as per the Credit Framework for Online Courses[1] by following SWAYAM Regulation 2016. SWAYAM is offering online courses by employing information and communication technology (ICT).

## II. EDUCATION TRANSFORMATION

The educationists that I engross routinely, all recognize that their organization will change drastically. Hence, all need to transform/ change in next 3 years in order to be relevant, competitive and result oriented. It is happening that yesterday's jobs become outdated and obsolete, and new jobs be taken to face future challenges. Almost six-seven out of ten most popular skill sets/ jobs today did not exist few years ago. Organization/industry's requirements/expectations and the skill sets/jobs of future will look even more different and challenging than today's skill sets/jobs.

The students in school will be joining a totally new and unexplored workforce. Tomorrow's work culture is being changed and diverted by modern gadgets and technologies like internet of every thing, video, mobile, analytics, and cloud computing. Not only this our advancement in the field of artificial intelligence, robots, drones and autonomous cars etc are taking us to a new future. The present opportunities and possibilities harness new challenges to today's leadership

To begin with, we are required to modify the skill sets, the way of working ,the way of communicating and above all the way of thinking to suit the work environment and industries.

Programming is important for advancement in many spheres including language, maths,history, geography etc

Not every child will become a programmer, but every student will need to understand how future needs/ roles will evolve and new jobs will be created. This change is challenging the whole education system from nursery to the highest degree developing students for new opportunities.

"Learning" in today's digital world will never stop.

Education is a noble profession which is also feeling impact of the digital age.

To accept the digital capabilities the whole education system is required to change its form. . The way of learning, education, thinking and how we do business are going to change and transform drastically.

**Anytime and Anywhere**

Learning does not only happen in the classroom in front of a teacher and other students. With mobile, ICT and video technologies, it is possible for a learner to learn whatever ,wherever and whenever. The dynamics of a class room is going to transform. Personalized learning, education and teaching will become important For example: A 15 year old boy named Gagan is required to take treatment for a serious ailment without discontinuing his education.

. To support him during this hard time, what was required was the normalcy of his classroom and being with his classmates and other students.

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**Global Classrooms**

The events and occurrences in the class room may be enhanced and improved with modern technology and arising potential. It includes augmented and virtual reality.

Students can visit places, other nations, monuments etc and understand other cultures and people to get a new insight and exposure.

Immersive and engrossing experiences will engage students in new manners. There will be more time for richer and experiential learning, education and teaching. Over 1000 indigenous classrooms in various schools and institutions across the country are available. Learning extends beyond the confine of the classrooms. Children across the world/ country are learning from one another and they each get to experience world curriculum as if it happens in front of them.

**Smart Schools**

Technology and innovations allows school/colleges to redirect cost of institutions and operations to learning and teaching. The Internet of Things(IoT) connects all the buildings and learning systems in schools/colleges and classrooms. Big data analytics as well as centralized control and operations will streamline the performance of the physical assets and resources. Spaces and assets become more dynamic and responsive to the changing needs of the teachers and students, while being cheaper to operate and meaningful. World is transforming at a fast pace. Modern class room must engage and ignite the students' mind. Students need to be globally smart and worldly wise.

To beat the competition - reading, writing, and arithmetic is not good enough, the students need - creativity, critical thinking, communication, and collaboration.

**Flipped classroom**

In this type of learning students study the initial portion before coming to college. This can be done through video and other materials available. This is a replacement for the traditional classes. Now the classes are held for a variety of other activities - such as projects, inquiry, debate, or simply working on class assignments. The work of home is done in the class and vice versa.

**ERP**

For education and academic activities, use of Enterprise Resource Planning[5] will yield the great dividend. This will facilitate the working and will increase more transparency and accountability in the education system.

**Cloud Computing[6]**

It is good to keep all the academic materials in the cloud. It is easy to share the resource economically. This will be helpful in any time – any where education. Organization need to be ready to harness this technology.

## III. SWAYAM

SWAYAM will provide a digitally level playing fields for students. The SWAYAM announces the courses every semester in advance, to choose the courses in the coming semester. SWAYAM[2] is a:

(a) Single window, using internet, providing interactive content to courses starting with high school and onward.

(b) It is ATAW (Any time Any Where) experience of skilling, educating and learning with high quality. This employs multimedia.

(c) This is the latest net-based learning platform which facilitates certification, control, planning and monitoring.

(d) Students discussion forum to interact and ask and clear their doubts.

(e) It supplements the teaching of the class rooms.

There is a need to lay down a procedure, which may be followed in the University for allowing students to choose MOOC courses. To lay down a procedure to be followed for allowing students to choose MOOC courses being offered by GoI through SWAYAM portal.

This paper gives a broad procedure to be followed by the universities in choosing and allowing MOOC courses to the students. The author has tried to take out the salient points from the references given at the end. The paper is the interpretation for exact details, readers are advised to read the references and their amendments and formulate their own strategies to implement the MOOC courses in their institutions.

## IV. NATIONAL COORDINATORS

There are eight National Coordinators in the following sectors :-

- Non-Technology Post Graduate Degree Programmes (UGC-University Grant Commission)
- Technical / Engineering UG & PG Degree programmes. (NPTEL-National Program For Technology Enhanced Learning)
- Non Technology under Graduate Degree programmes. (Communication)
- Diplomas and Certificates programmes. (IGNOU-Indira Gandhi National Open University)

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- School Educational Programmes from Class 9th to 10th (NCERT - National Council of Educational Research and Training)
- Out of school children Educational Programmes from Class 9th to 12th. (NIOS-National Institute of Open Schooling)
- Management programmes. (IIM-Indian Institutes of Management Bangalore)
- Teacher Training programme. (NITTR-National Institute of Technical Teachers' Training and Research, Chennai)

It employs four steps/ quadrant for the enrolled students for their learning [2] –

**Step I/ Quadrant** I : Tutorials using video and audio form – having simulation, animation and also virtual labs and other contents.

**Step II/ Quadrant II** : Contents using Text (PDF)/ Word document, books/ e-books and demo and if required interactive simulation etc

**Step III/ Quadrant III** : Rich Net resources : Provides related links, open source material incl Wikipedia, papers, journals, articles etc

**Step IV/ Quadrant IV** : Assess Yourself. States problem and solutions. Have assignment, fill the blanks, MCQ, quizzes, short/long answers etc

## V. RECOMMENDED PROCEDURE

- The consolidated updated list of MOOCs courses which are being offered in the Academic Session is available on the net at :—

http ://ugcmoocs.inflibnet.ac.in/courses.php

- Each Department/School/ Institute (Board of Studies) BoS, in every Oct/November & May/June, may check the availability of courses on above website or SWAYAM website which may be relevant to the program being offered and the courses being offered under the programs in the forthcoming semester.

- The Department/ School/ Institute BoS may then recommend the course/courses to be taken by its students (not more than one course to be offered on MOOC basis for a class in a given semester) taking into consideration the commencement date, duration, relevance and coverage of the course. In a semester, twenty percent (upto) of the total/sum credits/courses being offered/given in a particular program may be allowed to be taken from SWAYAM courses. The department/ schools/ institute BoS will also recommend the credits for the course. All relevant guidelines for MOOC courses be checked by the departments before recommendations and implementation. Such recommended course alongwith recommended credit processed by each dept on file for necessary approval through Dean Academics well in advance before the commencement of the academic session.

- Keeping the other factors/ points in view, while making the recommendations, the Board of studies may consider allowing SWAYAM[1] courses provided:

**(i)** Appropriate and suitable teaching faculty is not available for taking a course in the College/ Institution or

**(ii)** The teachers/facilities for offering the elective papers (courses), requested/sought for by the students are not being offered in the Institution/college and the same are available online on SWAYAM.

**(iii)** The teaching-learning process of institute/college will be supplemented by the offered SWAYAM course.

- Head of the Departments (HoDs) will ensure that the department has the requisite academic and physical infrastructure (like Laboratories, computer facilities, library etc.) to adopt chosen MOOC course and assigns course coordinator to hand hold the students in this process. The course coordinator/facilitator will guide the students throughout the course and to facilitate/conduct the Lab/Practical sessions/examinations in Approved Institutions

- On approval of MOOC courses by competent authorities, the same will be intimated to the students.

- The courses chosen by the university will be intimated to UGC at the following link:- http://ugcmoocs.inflibnet.ac.in/portal/index.php/course by Dean Academics.

## VI. EVALUATION AND CERTIFICATION OF MOOCS[1]

- The responsibility of elevating the registered students for the courses taken rests with the PI and host institution.

- The parent college/institution will incorporate the grade/ marks secured/obtained by the candidate/student, as intimated/communicated by the Host Institution in the grade/result sheet of the student. Practical component where relevant will be endorsed by the parent institute/ college.

- The signing of certificate of completion will be done the PI and sent to parent institute/college.

- Based on the academic council decision, the Controller of examination shall give/grant the equivalent/appropriate weight age/credit to the candidates/students.

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**Promotion**

UGC has developed TVCs (TV commercials), jingles and posters for creating awareness about the SWAYAM initiative. Institutions to make effective use of the social media tools like Twitter, Facebook, Whatsapp etc. for popularising these amongst the students and faculty. These TVCs , jingles and posters are available on UGC website. The institution rep will upload them on the University website and send regular messages using above social media apps about these TVCs, jingles and posters and about the MOOCs chosen by the university for adoption in the coming semester.

**Development**

HoDs will encourage faculty members to develop quality MOOCs[7] courses, which will give them the opportunity of using ICT[8] tools for teaching learning purpose and also provide them global visibility. For taking part in the development of quality MOOCs, the best faculty should be encouraged to come forward and apply on the UGc MOOCs website for developing MOOCs on any subject of their choice out of the curriculum for the post graduate programmes undertaken by the university. The UGC provides financial assistance as per the MOOCs guidelines. This will also give a global visibility to the university as well as the concerned faculty. The Universities which are under section 2(f) and 12 B of UGC Act, 1956, and eligible to receive central assistance may apply to UGC, and other institutes may apply to AICTE.

## VII. CONCLUSION

The above gives the guidelines, which may be suitably modified from time to time, by the management. The above is only illustrative and not exhaustive.

## REFERENCES

[1] UGC (Credit Framework for Online Learning Courses through SWAYAM) Regulation, 2016. New Delhi, the 19th July, 2016

[2] Guidelines for developing Online Courses for SWAYAM 1st June 2017

[3] Guidelines for Development and Implementation of Massive Open Online Courses (MOOCs), Ministry of Human Resource Development Department of Higher Education dated 11.03.2016

[4] All India Council for Technical Education Notification, New Delhi, the 17th August, 2016

[5] Leon A. Enterprise resource planning. McGraw-Hill Education; 2014, PP 47

[6] Buyya R, Broberg J, Goscinski AM, editors. Cloud computing: Principles and paradigms. John Wiley & Sons; 2010 Dec 17, PP 551

[7] Stacey P. The pedagogy of MOOCs. May. 2013 May 11;11:2013.

[8] Sutherland R, Armstrong V, Barnes S, Brawn R, Breeze N, Gall M, Matthewman S, Olivero F, Taylor A, Triggs P, Wishart J. Transforming teaching and learning: embedding ICT into everyday classroom practices. Journal of Computer Assisted Learning. 2004 Dec 1;20(6):413-25.

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An alumnus of **BITS** Pilani, **IIT** Kharagpur & College of Defence Management. my academic inclination has earned me a **Ph D.** The **President of India** has recognized my exceptional service with the award of prestigious '**Vishisht Seva Medal**' **twice**. I am also recipient of "**BITS Pilani Distinguished Alumnus Award**" by Delhi Chapter and and '**Education Leadership Award' – 2014** by '**World Corporate Universities Congress**', '**Academic Leadership Award' - 2015 by Higher Education Forum (HEF) and 'Award for Outstanding Contribution to Education 2017' by Stars of the Industry Group.**

I had served in the Army for 36 years in the Corps of EME and presently, I am the director of prestigious Amity School of Engineering and Technology, Amity University Madhya Pradesh, Gwalior.

**President of in India had also nominated me as a member of court of Assam University, Silchar wef 30 Jan 14. UGC** has nominated me as member of **NAAC Peer Team.**

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